

Pregnancy on Caesarean Scar: About Two Cases and Literature Review

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Abstract

Caesarean section scar pregnancy is an ectopic pregnancy of cervico-isthmic and cicatricial localization. It corresponds to implantation of the gestational sac in the scar or dehiscence of a previous caesarean section.

Pregnancy on a caesarean section scar is no longer an exceptional event. The advantage of early diagnosis lies in the possibility of choosing an appropriate treatment based on the clinical context, radiological data, technical resources and the patient's wishes.

In this article, we present two cases of patients diagnosed with scar pregnancy in the first trimester who benefited from conservative treatment in maternity hospital Harouchi of Casablanca University Hospital.

Keywords: Caesarean Section, Scar Pregnancy, Conservative Treatment, Ectopic Pregnancy

Introduction

Caesarean section scar pregnancy is an ectopic pregnancy of cervico-isthmic and cicatricial localization. It corresponds to implantation of the gestational sac in the scar or dehiscence of a previous caesarean section. The incidence is estimated at between 1/1800 and 1/2216 pregnancies [1]. This is a pregnancy at major risk of massive hemorrhage, requiring active management as soon as it is diagnosed. Analysis of the literature reveals limited series, with an increase in the number of publications relating to this subject since the 2000s and especially since 2006 [2]. The outcome of the first cases described was often hemostasis hysterectomy in the face of hemorrhage caused by treatment with primary curettage, or

spontaneous metrorrhagia without etiological diagnosis. Ignorance or late diagnosis could be associated with major complications such as uterine rupture, often leading to hysterectomy [3]. We present here a case of pregnancy on a Caesarean section scar, and through a review of the recent literature, we will highlight the diagnostic and therapeutic features of this condition, which practitioners' familiarity with will help improve its prognosis.

First case report

Mrs AS, aged 43, 4th gestation, 2nd parity, carrier of a double scar reduterus: the 1st case was an cesarean section due to a non-reassuring fetal condition, the 2nd was due to an over due delivery, and an aspiration following a terminated pregnancy.



She came to the gynaecological emergency department with pelvic pain and light black ishmetrorrhagia, which had been progressing for three days in a 9-week amenorrhea. On clinical examination, hemodynamics were stable, abdominal palpation revealed no tenderness, and speculum examination confirmed the endo-uterine origin of the pain.

Vaginal touch combined with abdominal palpation revealed a slightly enlarged uterus with no latero-uterine mass or signs of peritoneal irritation. An initial ultra sound performed in the emergency department revealed the presence of a gestational sac opposite the uterine isthmus, with no embryonic echo, whose implantation appeared to be invading the myometrium (**Figure 1,2**).



Figure 1: Sac gestational opposite the uterine isthmus in ultra sound.



Figure 2: Sac gestational opposite the uterine isthmus in ultra sound (3D).

A laparotomy was performed. On exploration, wenoted the presence of a left isthmic bluish welling visible through the visceral peritoneum, whose incision after detachment and lowering of the bladder (**Figure 3**) revealed the exit of the product of conception (**Figure 4**). This was resected, along with the scar, before the hysterorrhaphy was performed. Post-operative management was straight forward. The β HCG level came back negative after 2 weeks.*

Second case report

Mrs HL, aged 37, 3rd gesture, 2nd parent, carrier of a double scar uterus. She presented to the gynaecological emergency department with pelvic pain and slight blackish menometrorrhagia, which had been progressing for three days in the context of amenorrhoea of 8 weeks plus 2 days. On clinical examination, haemodynamics were stable, abdominal palpation revealed no tenderness and speculum examination revealed minimal blackish bleeding of endo uterine origin.

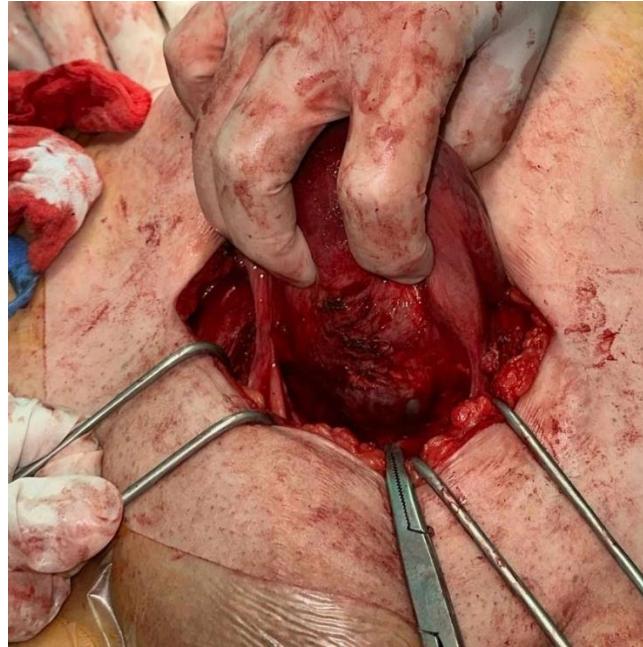


Figure 3: Surgical exploration: view of the ectopic location of the pregnancy at myometrial level.



Figure 4: The product of conception.

Vaginal examination combined with abdominal palpation revealed a slightly enlarged uterus, with no latero-uterine mass or signs of peritoneal irritation. An initial ultrasound performed in the emergency department revealed the presence of a gestational sac on the anterior wall opposite the uterine isthmus, the site of an embryo with positive cardiac activity and a CLL of 8 SA (**Figure 5**).

An MRI scan showed isthmic implantation of a pregnancy on a hysterotomy scar through which there was a rupture 1.1 mm in diameter where material from the decidual reaction had exited, creating a small mass 8.5x5x12 mm in diameter within the myometrium, budding exophytically and appearing to

rupture the serosa with intimate contact with the bladder dome (**Figure 6**).



Figure 5: Sac gestational opposite the uterine isthmus in ultra sound.



Figure 6: Isthmic implantation of a pregnancy on a hysterotomy scar

A laparotomy was performed. During exploration, the local condition was bad and adhesiolysis was laborious, followed by isthmectomy with aspiration of the throphoblastic material

(**Figure 7,9**), and finally a hysterotomy with vicryl N1, and plane-by-plane closure with hemostasis (**Figure 8**).



Figure 7: Surgical exploration: view of the ectopic location of the pregnancy at myometrial level.



Figure 8: Hysterotomy after evacuation of ectopic pregnancy.

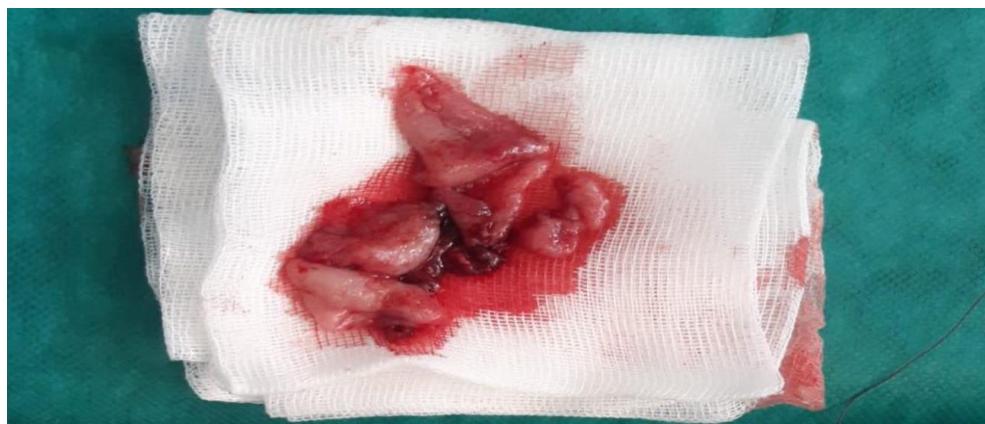


Figure 9: The product of conception.

Post-operative management was straight forward. The β HCG level came back negative after 2 weeks.

Discussion

Caesarean scar pregnancy is a very uncommon and potentially fatal form of abnormal implantation of a gestational sac within the myometrium and fibrous tissue of the scar [3]. Prevalence ranges from 1/1800 to 1/2226 pregnancies, and corresponds to only 6.1% of ectopic pregnancies in women with early caesarean section [4].

The incriminating risk factors are similar to those for placenta accreta: on the one hand, the number of previous caesarean sections and endo-uterine procedures (curettages, manual uterine revision); on the other, in vitro fertilization (IVF) techniques with embryo transfer have also been incriminated [5,6], as the less solicited and less mature lower segment would not allow optimal quality of healing and would favor ectopic implantation of the egg [7].

Clinical manifestations include abdominal pain and bleeding,

which can range from simple spotting to life-threatening haemorrhage [5]. However, clinical manifestations can sometimes be asymptomatic.

All this underlines the importance of rapid and accurate diagnosis [8] in improving vital and functional prognosis. Two-dimensional endo-cavity ultra sonography is the first-line radiological examination for making the diagnosis.

The latter is based on the criteria established by Vial in 2000 [9], firstly combining: an empty uterus; an empty cervical canal; the existence of a disruption of the gestational sac on the anterior uterine wall on a sagittal section of the uterus.

Other imaging examinations may be carried out, such as three-dimensional ultrasound or MRI, to determine anatomical relationships, specifying the depth of trophoblastic invasion in the myometrium, potential involvement of the serosa or bladder, and the exact position of the gestational sac [10]. There are currently no formal recommendations regarding treatment modalities. Currently, treatment, whether medical or surgical, remains conservative,



except in cases of therapeutic failure. Medical treatment in haemodynamically stable patients is feasible for many teams. It is based on the administration of methotrexate locally (injection *in situ*, possibly under ultrasound or coelioguidance) or systemically, or a combination of the two, at a dose of 1mg/kg [11]. This treatment requires daily monitoring of the fall in BHCG during hospitalisation, then weekly until negativation, with ultrasound monitoring until complete disappearance of the ovarian sac, with an average time to BHCG negativation of 4 to 6 weeks. The prognostic factors for failure of medical treatment would be as follows: BHCG level greater than 10,000 IU/L, GA greater than 9 weeks' gestation, presence of foetal cardiac activity on ultrasound, craniocaudal length of the embryo greater than 10 mm on ultrasound.

The need for surgical treatment is debatable. Two important clinical problems may arise following poor healing of caesarean incisions. The first is the reservoir effect of the defect, which may be linked to symptoms of menstrual loss, infertility and pelvic pain, the mechanism of which is not identified. The second is the residual thickness of the myometrium at the site of the defect, which is a potential risk factor for uterine dehiscence in a subsequent pregnancy. The first clinical condition can be managed by hysteroscopic resection of the defect, but this approach obviously cannot increase the thickness of the myometrial wall and may present a potential risk of reducing the strength of the myometrium. The laparoscopic approach restores these two conditions by eliminating the reservoir and simultaneously strengthening the myometrial wall. Most studies of hysteroscopic management of caesarean sections have not provided information on residual myometrial richness before or after the procedure [11-15].

Conclusion

Pregnancy on a caesarean section scar is no longer an exceptional event. It is now an integral part of the long-term complications of Caesarean section. It can be classified at the same level of severity as placenta accreta. The advantage of early diagnosis lies in the possibility of choosing an appropriate treatment based on the clinical context, radiological data, technical resources and the patient's wishes.

This could limit the serious haemorrhagic complications that very often accompany total hysterectomy, compromising the patient's subsequent fertility when maternal death has been avoided.

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